

FIG. 1

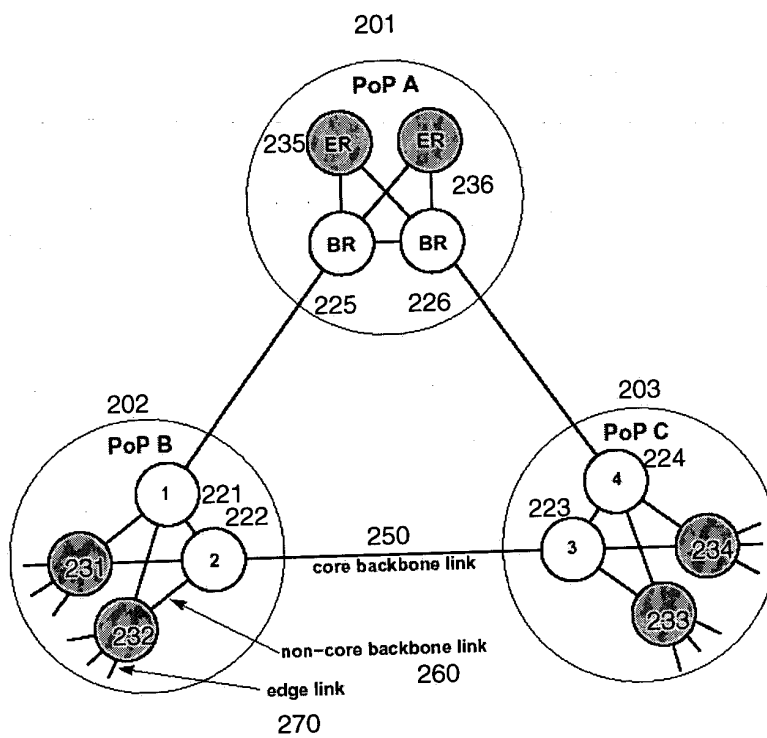


FIG. 2

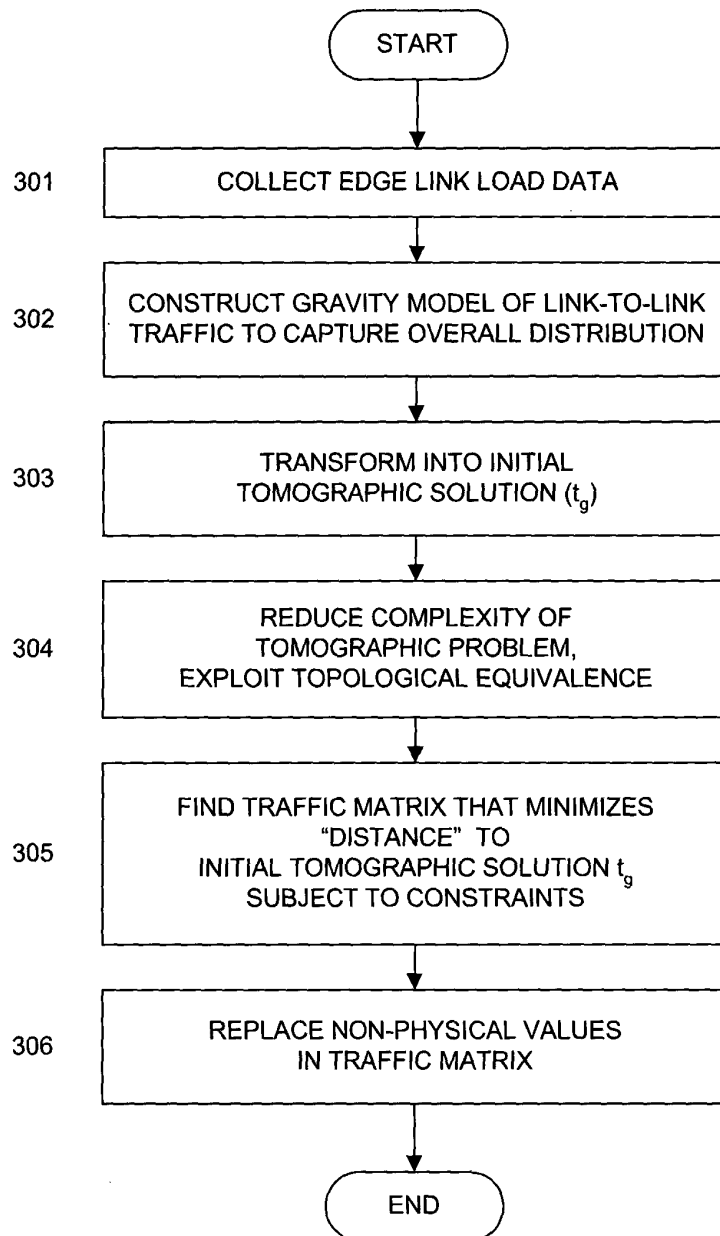


FIG. 3

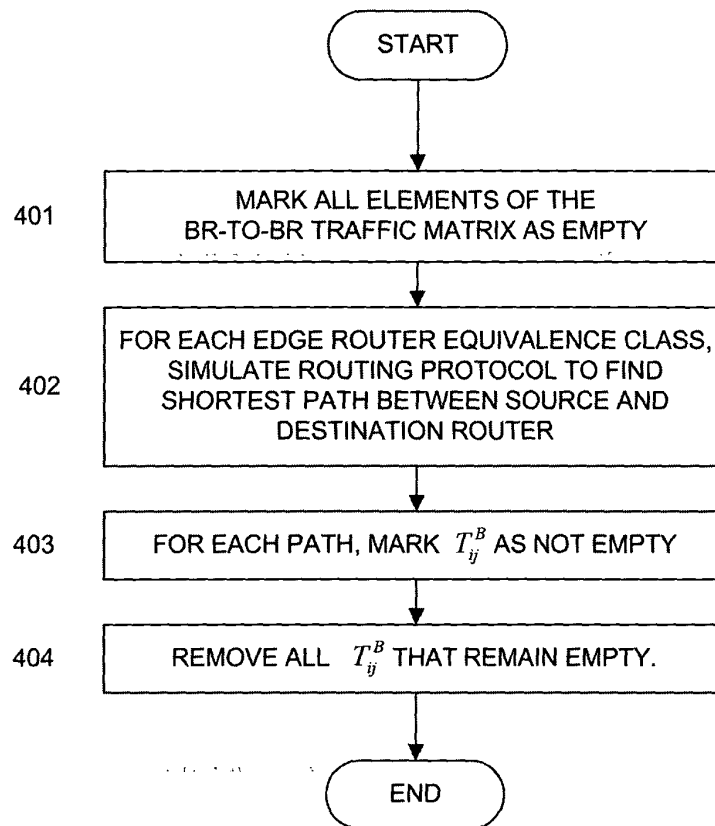


FIG. 4

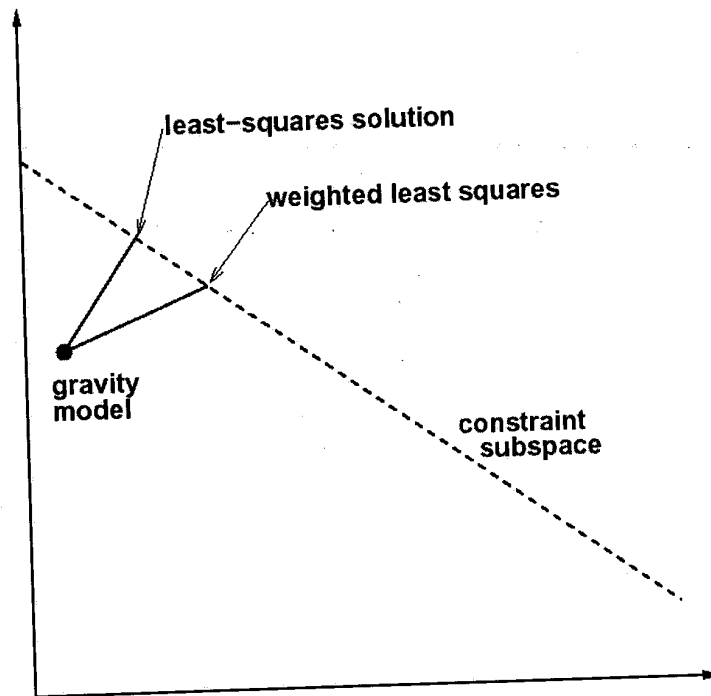


FIG. 5

```

%
% weighted least-squares estimate of
% the traffic matrix
%
% Input:
%   A      matrix A in constraints  $x=A*t$ 
%   x      vector x in constraints  $x=A*t$ 
%   tg     initial gravity model solution
%   w      weight vector
%
% Output:
%   t      estimated traffic matrix (as a
%          vector) that minimizes  $|(t-tg)./w|$ 
%          among all t's that minimize  $|A*t-x|$ 
%
function [t] wlse(A,x,tg,w)

% equivalently transform  $x=A*t$  into
%  $xw=Aw*tw$ , where  $tw=(t-tg)./w$ 
xw = x - A*tg;
[r, c] = size(A);
Aw = A .* repmat(w', r, 1);

% solve  $tw=Aw*tw$  by computing the pseudo-
% inverse of matrix Aw (through svd)
tw = pinv(full(Aw)) * xw;

% transform tw back to t
t = tg + w .* tw;

```

FIG. 6